SYSTEM 5 IP

FIVE INPUT INTEGRATED A/V SWITCHER WITH AUDIO AMPLIFIER AND IP LINK™ ETHERNET CONTROL

IPLINK ™

- ■ **350 MHz (-3dB) video bandwidth**

- ■ **IP Link™ Ethernet monitoring and control**

- ■ **Universal RS-232 projector control**

- ■ **Six relays for room control**

- ■ **IR learning capabilities for DVD and VCR control**

- ■ **Integrated 40-watt stereo audio amplifier**

- ■ **Configurable inputs**

- ■ **Versatile remote control options**

- ■ **Rack-mountable**

The Extron System 5 IP is a five input, one output integrated A/V switcher that features configurable inputs, easy-to-use IR learning, customized display control via RS-232, relays for room control, and an integrated stereo audio amplifier. This switcher features IP Link™ for off-site control and proactive monitoring and is ideal for smaller scale A/V installations, such as classrooms, conference rooms, and boardrooms.

Extron ® Electronics

DESCRIPTION

The Extron **System 5 IP** is a five input, one output integrated A/V switcher that provides an all-in-one, economical solution for small-scale A/V installations in classrooms, boardrooms, conference rooms, and multimedia environments. It includes such features as configurable inputs, easy-to-use IR learning, customized display control via RS-232, relays for room control, an integrated 40-watt (rms) audio amplifier, and Extron's IP Link™ Ethernet control for off-site control and proactive monitoring of the system.

Universal Projector Control
The System 5 IP offers two methods of projector control: RS-232 or IR. The switcher can learn IR signals from remote controls. This enables the switcher to communicate with the display and sources such as VCRs and DVD players. IR learning makes setup and operation simple and customizable. Virtually any RS-232 controllable projector or display device can be used with the System 5 IP. Extron creates and administers a wide selection of commonly used projector control drivers that enable the System 5 IP to control basic projector functions such as power and input selection. Users can create their own drivers or go to the Extron Web site to download RS-232 drivers configured for the latest and most popular projectors. In addition, a custom configuration mode is available to allow for user-defined IR or RS-232 commands.

Room Control
The System 5 IP also offers room control capability, so room lighting, screen settings, and other device functions may be controlled through the switcher's six internal relays. By providing projector control, room control, universal compatibility with displays, and system audio capabilities, the System 5 IP consolidates functions that would typically require up to six different products into one integrated solution.

Fixed and Variable Preamp Line Level Outputs
The System 5 IP provides fixed and variable line level audio outputs on captive screw terminals for use with an external amplifier or self-powered speakers. Fixed audio outputs are especially effective when used with external mixers, amplifiers, and assistive listening devices. Variable audio outputs enable the audio signal levels to be adjusted using the switcher's volume control.

Integrated Stereo Audio Amplifier
The System 5 IP is available with or without an internal 40-watt audio amplifier (2 x 20 watts rms) to drive 4 or 8 ohm speakers. The unit can also be set for dual mono mode where it sums the left and right input signals together and drives the same mono signal to both the left and right outputs.

IP Link™ Ethernet Control
The System 5 IP is equipped with Extron's IP Link™, an IP integration technology specifically engineered to meet the needs of professional A/V environments—from large universities and businesses to small residential installations. IP Link provides these advantages:

- **Global compatibility** – All IP Link products use industry standard Ethernet communication protocols, including ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, and SMTP.

- **High performance architecture** – Web pages are served many times faster (6 Mbit/sec transfer rate) than similar products.

- **Multi-user support** – Multiple, simultaneous connections enable each IP Link device to support many concurrent users and improve system throughput by sending information in parallel.

- **IP Link Global Viewer™** – This Web-based asset management application is specifically designed to work with products that include IP Link technology. Global Viewer enables a variety of asset management functions including proactive maintenance, event scheduling, remote technical support, and theft alerts.

FEATURES

- **Five inputs** – Two inputs are configurable for composite video, S-video, or RGBHV on BNC connectors, two inputs are configurable for composite video or S-video on BNC and 4-pin mini DIN connectors, and one front panel 15-pin HD connector accepts RGBHV.

- **One output** – Compatible with RGBHV, RGBS, RGsB, RsGsBs, S-video, and composite video signals on female BNC connectors.

- **Bandwidth** – 350 MHz (-3dB) video bandwidth maintains signal integrity.

- **Universal projector control** – The System 5 IP provides universal projector control via RS-232 or IR for compatibility with virtually any controllable display device.

- **Pre-configured drivers** – Extron offers downloadable, pre-configured RS-232 or IR control drivers for many displays and source devices. A configuration port is conveniently located on the front panel of the switcher.

- **Room control** – The System 5 IP is equipped with six internal relays to control lighting, screen settings, and other device functions. The relays may be controlled through the front panel, IR 402 remote, SCP 150 control pad, or RS-232.

- **VCR and DVD player control** – The System 5 IP is capable of performing IR learning which enables it to control various source devices when using optional IR control modules (IRCMs) such as the IRCM-DV+.

- **Preamp line level** – The System 5 IP provides fixed and variable preamp line level audio outputs.

- **Integrated stereo amplifier** – The System 5 IP is available with or without an internal stereo amplifier rated at 40 watts, (2 x 20 watts rms), into 4 or 8 ohms.

- **Dual mono mode** – The System 5 IP can be set for dual mono mode where it sums the left and right input signals together and drives the same mono signal to both the left and right outputs.

- **Inactivity timer** – Adjustable timer can automatically shut down a display device to preserve energy, prevent plasma burn-in, and extend projector lamp life.

- **Backlit buttons** – The backlit buttons on the front panel of the System 5 IP can be conveniently custom-labeled for easy identification. Because the buttons illuminate, they are helpful for presenters in low-light environments.

- **Triple-Action Switching™ (RGB delay)** – Blanks the screen during switching of RGB signals to eliminate visible switching transitions.

- **Rack-mountable** – Housed in a 1U, full rack width metal enclosure. Mounting brackets are included for mounting in a rack or under a table.

- **Versatile control options** – System switcher control is provided via front panel operation, the optional IR 402 remote control, or optional SCP 150 Series hardwired control pads. As a simplified and cost-effective option, the System 5 IP is also offered without front panel controls. This model still provides the front panel 15-pin HD input connector for RGBHV.
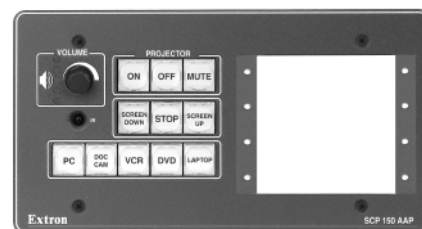
SCP 150 AAP

OPTIONAL ACCESSORIES

SCP 150

SCP 150 & SCP 150 AAP
Hardwired Control Pads for Remote control switching, projector, and room functions

- Duplicates the System 5 IP's front panel controls
- SCP 150 fits into a two-gang box
- SCP 150 AAP includes openings for up to four single space Architectural Adapter Plates (AAPs) and fits into a four-gang box
- Mountable in a podium, table, or wall
- Illuminated buttons aide presenters in low-light environments
- Available in gray, black, or white.

IR 402

IR 402
Handheld Remote

- Duplicates the System 5 IP's front panel controls
- Provides infrared remote control of switching, projector, and room functions
- Approximate range: 30 feet (9.14 meters)

IR Control Modules (IRCMs)
Extron IRCMs are Architectural Adapter Plates (AAPs) that provide remote control via infrared signals of external powered sources. All IRCMS are available in gray, black, and white and include one or two IR emitters.

IRCM-DV+

IRCM-DVD+
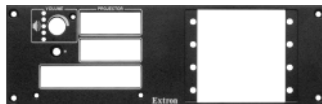

IRCM-DVD

IRCM-VCR

IRCM-Tape

- **IRCM-DV+** ...... Provides remote control of a VCR and DVD player's basic functions
- **IRCM-DVD+** .... Provides advanced setup and user functions found on DVD players
- **IRCM-DVD** ...... Provides remote control of a DVD player's basic functions
- **IRCM-VCR** ...... Provides remote control of a VCR's basic functions
- **IRCM-Tape** ...... Provides remote control a tape deck's basic functions.

SCM 150-L

SCM 150 L
Low profile lectern mounting kit for the Extron SCP 150

- 3.15-inch/8 cm tall for discreet architectural integration in a wall, lectern, or the UCM-RAAP and UCM-10X8P faceplates
- Available in black and white

SCM 150-LAAP

SCM 150 LAAP
Lectern mounting kit with four single space Architectural Adapter Plate (AAP) openings

- 3.15-inch/8 cm tall for discreet architectural in a wall or lectern
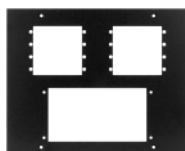- Available in black and white

UCM RAAP

UCM RAAP
2U, full rack width, universal controller mounting kit with eight single space AAP openings

- Designed for use with SCP 150 control pads combined with a 3.15-inch/8 cm tall lectern mount
- Available in black and white

UCM 10X8P

UCM 10X8P
Universal controller mounting plate kit

- Eight single space Architectural Adapter Plate (AAP) openings
- Designed for use with SCP 150 control pads combined with a 3.15-inch/8 cm tall lectern mount
- Mountable in a wall, desk, or lectern using a mud ring or Hoffman box (model number A-SE10X8X4)
- Available in black and white

IP LINK AND THE SYSTEM 5 IP

Extron® Electronics

Typical Environment
The IP Link feature of the System 5 IP gives the A/V administrator of an educational facility the ability to access, monitor, and troubleshoot all of the school's A/V equipment from a single location on campus. The Extron IP Link Global Viewer is a key asset management tool that allows the administrator to identify which A/V products are connected to the System 5 IP. Once the products are identified and configured, the administrator can view the entire A/V system via any Web browser such as Microsoft® Internet Explorer or Netscape Navigator. From there, the administrator is able to oversee all the connected products from the convenience of a single workstation.

For example, the administrator can track the projector lamp hours in each classroom and generate an e-mail alert at 1,350 hours, well before its life maximum of 1,500 hours. The alert sent by the System 5 IP can be received by e-mail via a computer, cell phone, PDA, or pager. The administrator can then order and replace the new lamp before the existing one burns out.

IP Link includes a real-time clock that allows the administrator to program operating alerts, schedule routine equipment activity, or run maintenance checks on lamp hours, environmental conditions, connectivity, and other issues vital to operations. For instance, the administrator may want to configure the projectors to power on or off at pre-selected times, while each device is automatically monitored via its connection to the System 5 IP. As a result, downtime is minimized because equipment is proactively serviced, the administrator knows the status of all devices at any time, and utility expenses are reduced.

Typical Room
In a typical classroom, The System 5 IP is at the center of an A/V system that consists of several different sources. This could include a local computer — which every presentation environment usually has — as well as a VCR, DVD player, sound system, and document camera. The VCR, DVD player, and document camera are controlled via Infrared (IR) — either hardwire or remote through the System 5 IP.

The display or projector is RS-232 controlled, although it may be configured to be controlled via IR as well. In addition, the System 5 IP is equipped with six internal relays, which enables it to control the room's lights, screen, drapes, and other functions. Using IP Link, the System 5 IP can centralize control of the projector, the sources, and the room by simply accessing the switcher's Web page via any Web browser. Depending on the setup, the instructor is able to control the entire system using a standard, local computer, effectively turning it into an A/V control panel.
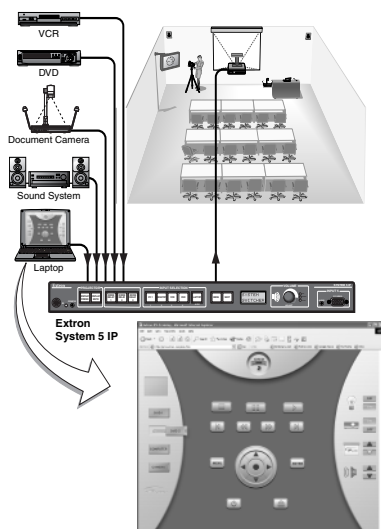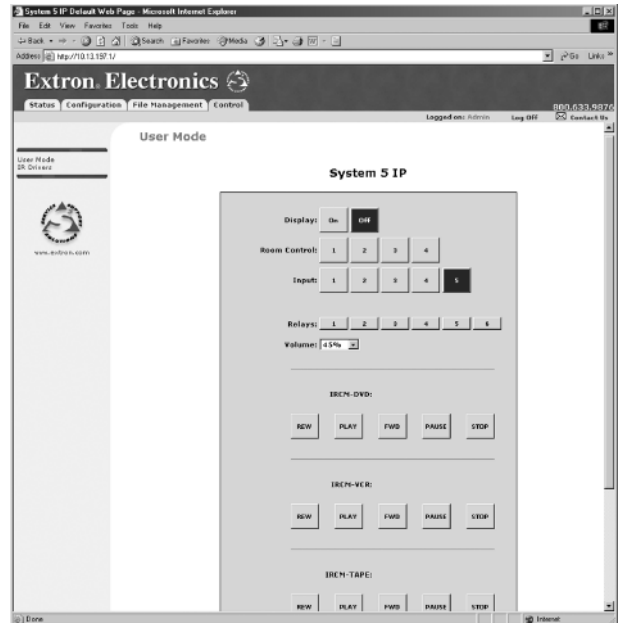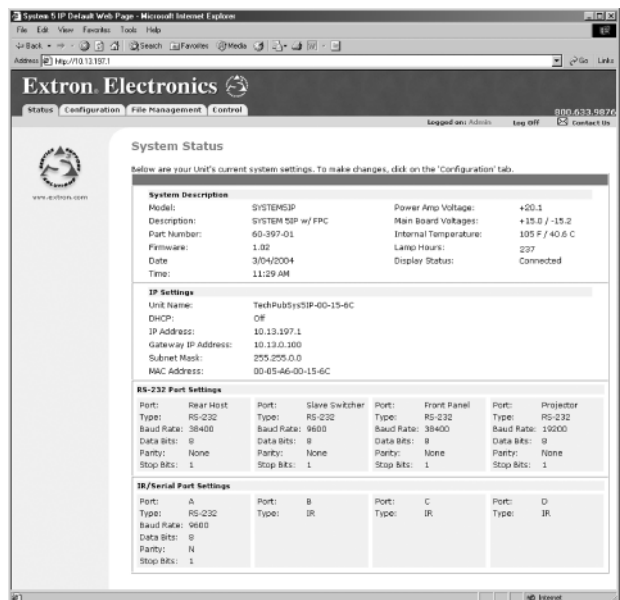

System 5 IP configuring and control can be done with any web browser

A typical system status web page

Figure 2

SPECIFICATIONS

VIDEO

Gain .... Unity
Bandwidth .... 350 MHz (-3dB), fully loaded
Crosstalk .... -68dB @ 10 MHz, -39dB @ 100 MHz

VIDEO INPUT

Number/signal/connectors................ 1 RGBHV, RGBS, RGsB, RsGsBs on 15HD
2 RGBHV, RGBS, RGsB, RsGsBs, S-video, or composite video on 2 x 5 BNCs
2 S-video or composite video on BNCs or 4-pin mini DINs
Nominal level.................................... 1 V p-p for Y of S-video, and composite
0.7 V p-p for RGB
0.3 V p-p for C of S-video
Impedance .... 75 ohms
Horizontal frequency .... 15 kHz to 145 kHz
Vertical frequency............................. 30 Hz to 170 Hz

VIDEO OUTPUT

Number/signal/connectors................ 1 RGBHV, RGBS, RGsB, RsGsBs on BNCs
1 S-video on 2 BNCs
1 composite video on 1 BNC
Nominal level.................................... 1 V p-p for Y of S-video, and composite
0.7 V p-p for RGB
0.3 V p-p for C of S-video
Impedance .... 75 ohms
Return loss .... <-40dB @ 5 MHz
Switching type .... Triple-Action (RGB delay)

SYNC

Input/output type .... RGBHV, RGBS, RGsB, RsGsBs (follows input)
Standards.. TTL (RGB), NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level .... 2.0 V to 5.0 V p-p
Output level..................................... 5.0 V p-p, unterminated

AUDIO

Gain .... Unbal. output: 0dB; bal. output: +6dB
Frequency response
    Power amp (4 or 8 ohm).............. 20 Hz – 20 kHz, 0dB to -1.5dB @ 1 w
    Lineout/preamp........................... 20 Hz – 20 kHz, 0dB to -0.5dB
THD + Noise .... <0.15% @ 1 kHz at max. power output
S/N at max. power output or line level output (unweighted)
    Power amp .... >80dB at 10 Hz – 22 kHz
    Preamp .... >90dB at 20 Hz – 20 kHz
    Lineout .... >98dB at 10 Hz – 22 kHz
Crosstalk .... <-80dB @ 1 kHz, fully loaded
Stereo channel separation .... >80dB @ 1 kHz
CMRR... >60dB @ 20 Hz – 20 kHz

AUDIO INPUT

Number/signal/connectors................ 4 stereo or mono, bal./unbal.
on 3.5 mm captive screw connectors, 5 pole
1 stereo or mono, unbal. on 3.5 mm TRS jack
Impedance .... >10k ohms unbal.
Nominal level.................................... -10 dBV (316 mVrms)
Maximum level .... +18dBu (6.16 Vrms)
Input gain adjustment .... -40dB to +30dB, adjustable per input

AUDIO OUTPUT — LINE LEVEL

Number/signal/connectors................ 2 stereo or mono, bal./unbal. (1 fixed and 1 variable) on (2) 3.5mm captive screw connectors, 5 pole
Impedance .... 50 ohms unbal., 100 ohms bal.
Nominal level.................................... -10 dBV (316 mV) or +4dBu (1.23 V)
Maximum level (600 ohm)................ >+18dBu, (6.16 Vrms), balanced @ 1% THD + N

Number/signal/connector .... 1 stereo or mono on 4 position screw terminal
Sensitivity... -22 dBV (80 mVrms, (adjustable)
Power bandwidth at rated maximum power output
    4 ohm output .... 10 Hz to 20 kHz, 0.5% THD
    8 ohm output .... 20 Hz to 20 kHz, 0.8% THD
Drive/full power out......................... 40 watts; 20 watts (rms) per channel, 4 or 8 ohm load
Protection .... Input limiting, thermal, short circuit

CONTROL/REMOTE — SWITCHER

Serial control port .... 2 RS-232: 1 rear panel 9-pin female D connector, 1 front panel 2.5 mm TRS mini jack
Baud rate and protocol .... 38400, 8-bit, 1 stop bit, no parity
Ethernet control port .... 1 RJ-45 female
Ethernet data rate .... 10/100Base-T, half/full duplex

Extron remote key pad control .... (1) 3.5 mm captive screw, 5 pole
Program control................................ Extron's configuration program for Windows® Extron's Simple Instruction Set™ – SIS™ Microsoft® Internet Explorer, Netscape® Navigator®, Telnet

CONTROL — RELAY

Number/type .... 6 momentary or latching
Connectors.. (3) 3.5 mm captive screw connectors, 3 pole
Contact rating .... 24 V, 1A

CONTROL — PROJECTOR

Projector control port; RS-232 .... (1) 3.5 mm captive screw connector, 3 pole

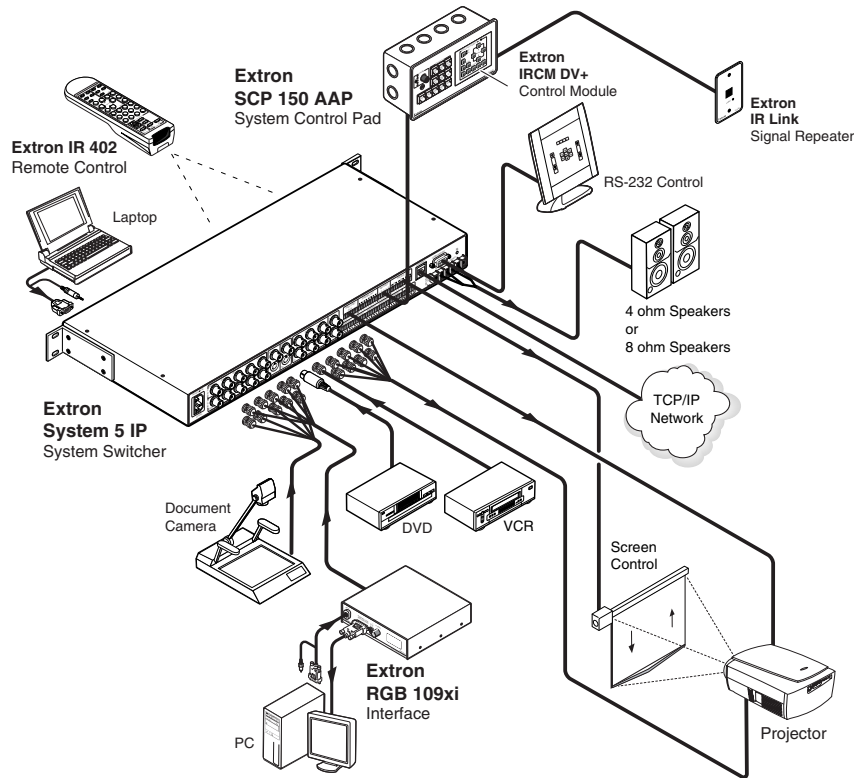## CONTROL — PERIPHERAL EQUIPMENT

IR/serial control ports .... (4) 3.5 mm captive screw connectors, 2 pole
Programmable: RS-232 (±5 V), TTL level (0 to 5 V), Infrared up to 1 MHz
IR learning frequencies .... 30 kHz to 62 kHz
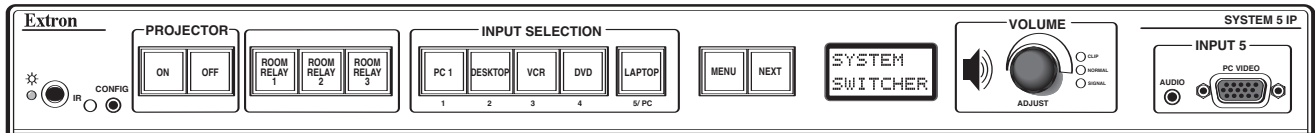
GENERAL

Power... 100VAC to 240VAC, 50/60 Hz, 50 watts, internal, autoswitchable
Rack mount .... Yes, with included brackets
Enclosure type .... Metal
Enclosure dimensions .... 1.75" H x 17.5" W x 9.4" D (1U high, full rack width) 4.4 cm H x 44.4 cm W x 23.9 cm D (Depth excludes connectors, knob, and buttons. Width excludes rack ears.)
Product weight .... 6.0 lbs (2.7 kg)
Shipping weight................................ 11 lbs (5.0 kg)
DIM weight
    USA/Canada .... 10 lbs (5 kg)
    International .... 11 lbs (5 kg)
Listings... UL, CUL
Compliances .... CE, FCC Class A, VCCI, AS/NZS, ICES

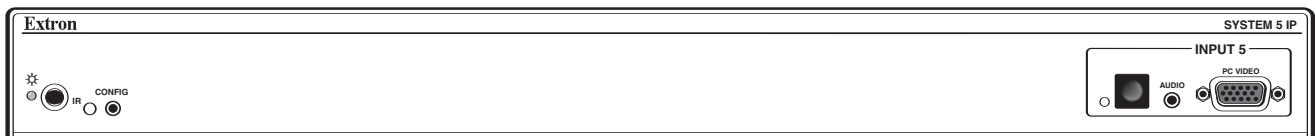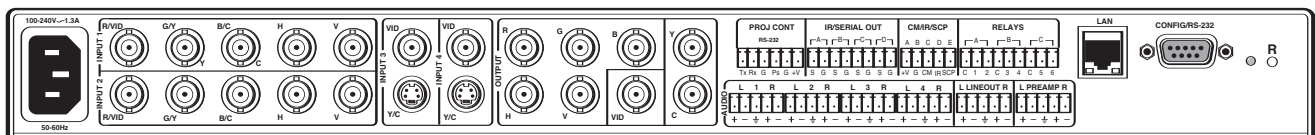| Model	Part Numbers
System 5 IP	60-397-01
System 5 IP (non-amplified)	60-397-02
System 5 IP (without front panel controls)	60-397-10
System 5 IP (non-amplified, without front panel controls)........	60-397-12

APPLICATION DIAGRAM

- **Extron IR 402** Remote Control
- Laptop
- **Extron SCP 150 AAP** System Control Pad
- **Extron IRCM DV+** Control Module
- **Extron IR Link** Signal Repeater
- RS-232 Control
- 4 ohm Speakers or 8 ohm Speakers
- TCP/IP Network
- **Extron System 5 IP** System Switcher
- Document Camera
- DVD
- VCR
- Screen Control
- **Extron RGB 109xi** Interface
- PC
- Projector

PANEL DRAWINGS

System 5 IP (Front)

System 5 IP without FPC

System 5 IP without Amp

System 5 IP (Back)

04-04
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REV. B